

FIGURE 3

Scheme: Synthesis of piperidine stilbenes.

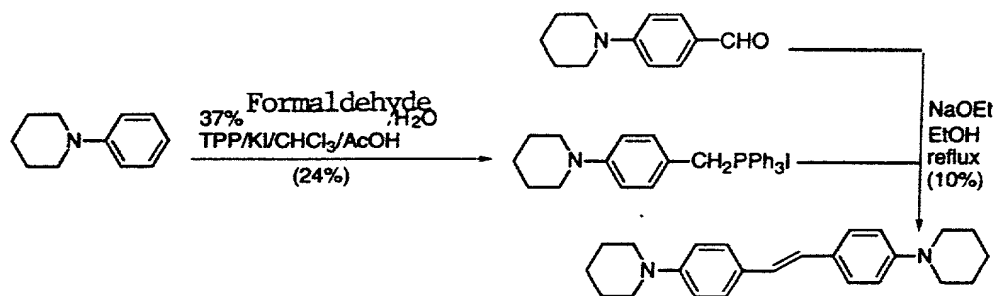


FIGURE 4

Scheme: Synthesis of 4-[N-(t-Butoxycarbonyl)]-piperazine-benzaldehyde.

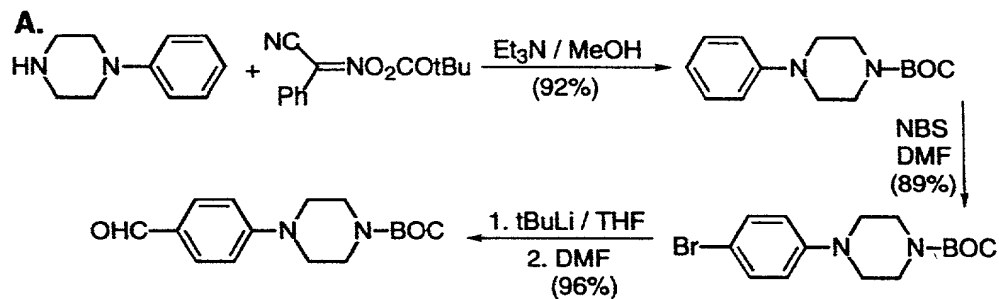


FIGURE 5

Scheme showing the synthesis of dimethacrylate substituted bisdonor-stilbenes.

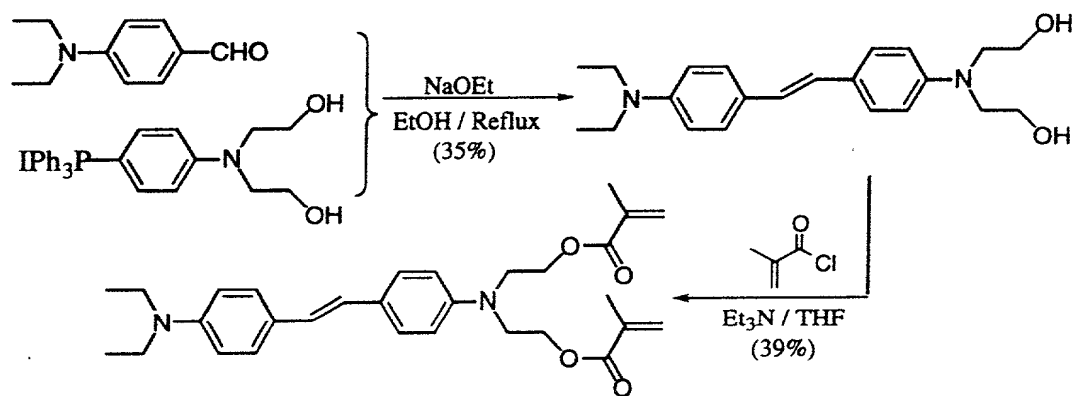
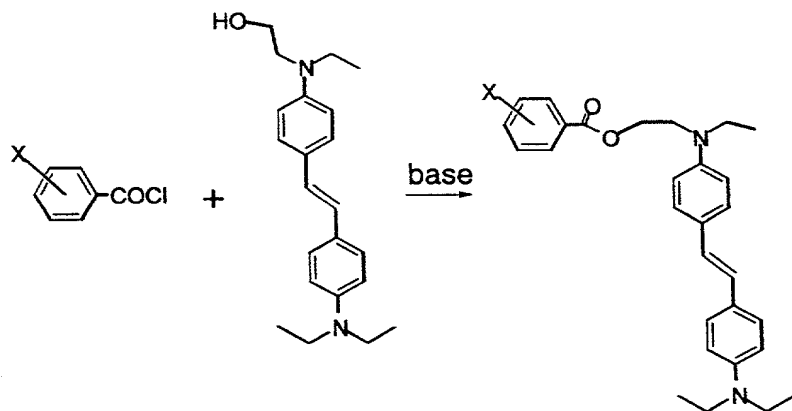


FIGURE 6



X = p-NO₂, p-CN, p-OMe, 3,5-Dinitro

FIGURE 7

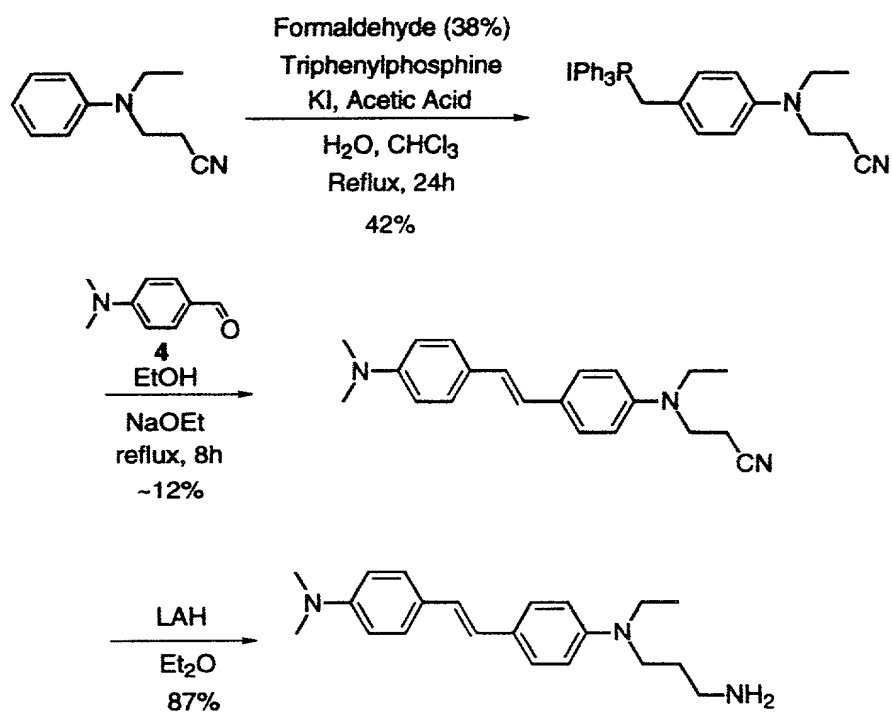


FIGURE 8

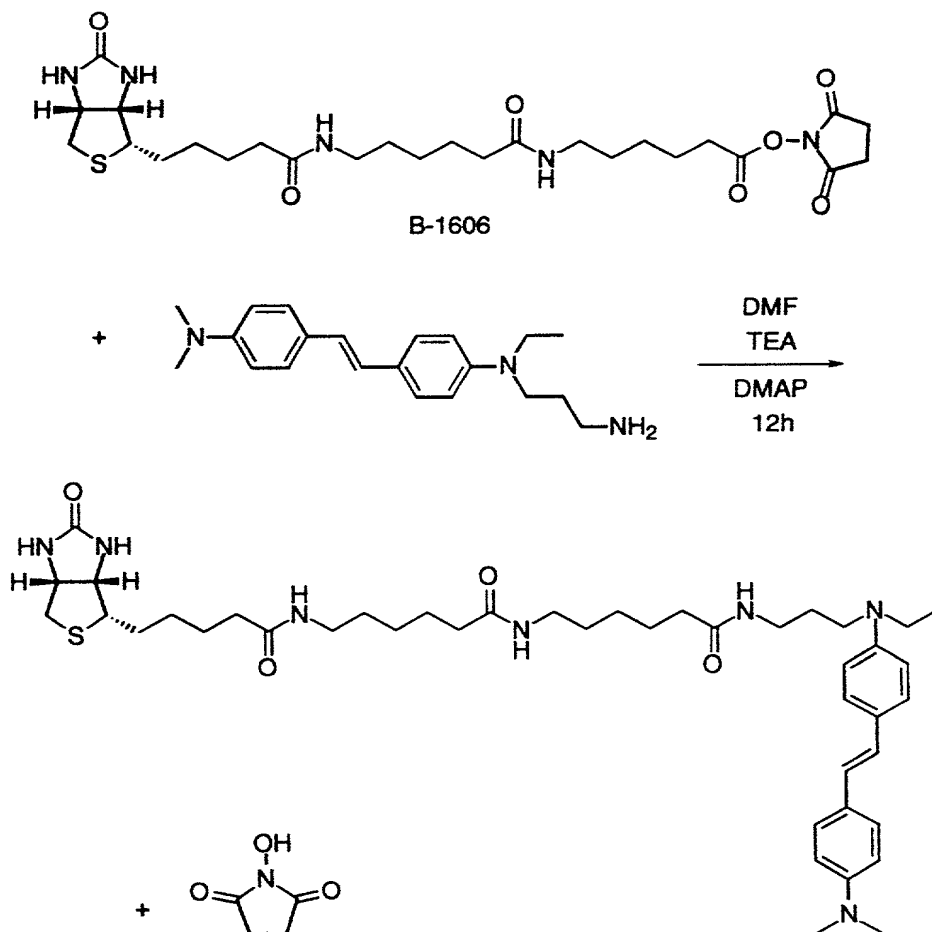


FIGURE 9

R = Ph, *n*-Bu

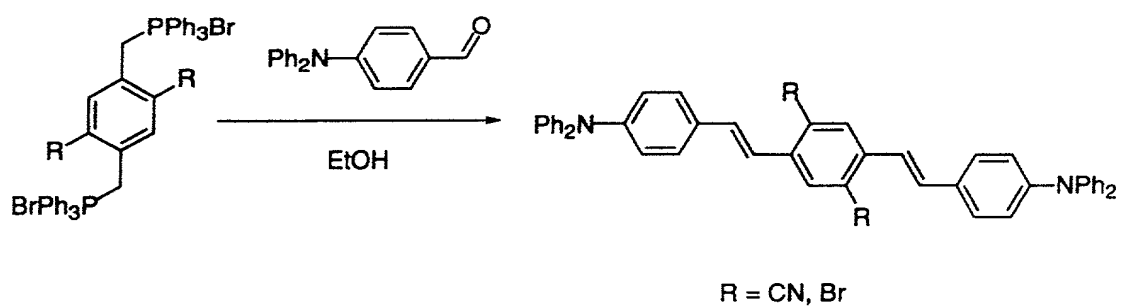


FIGURE 11

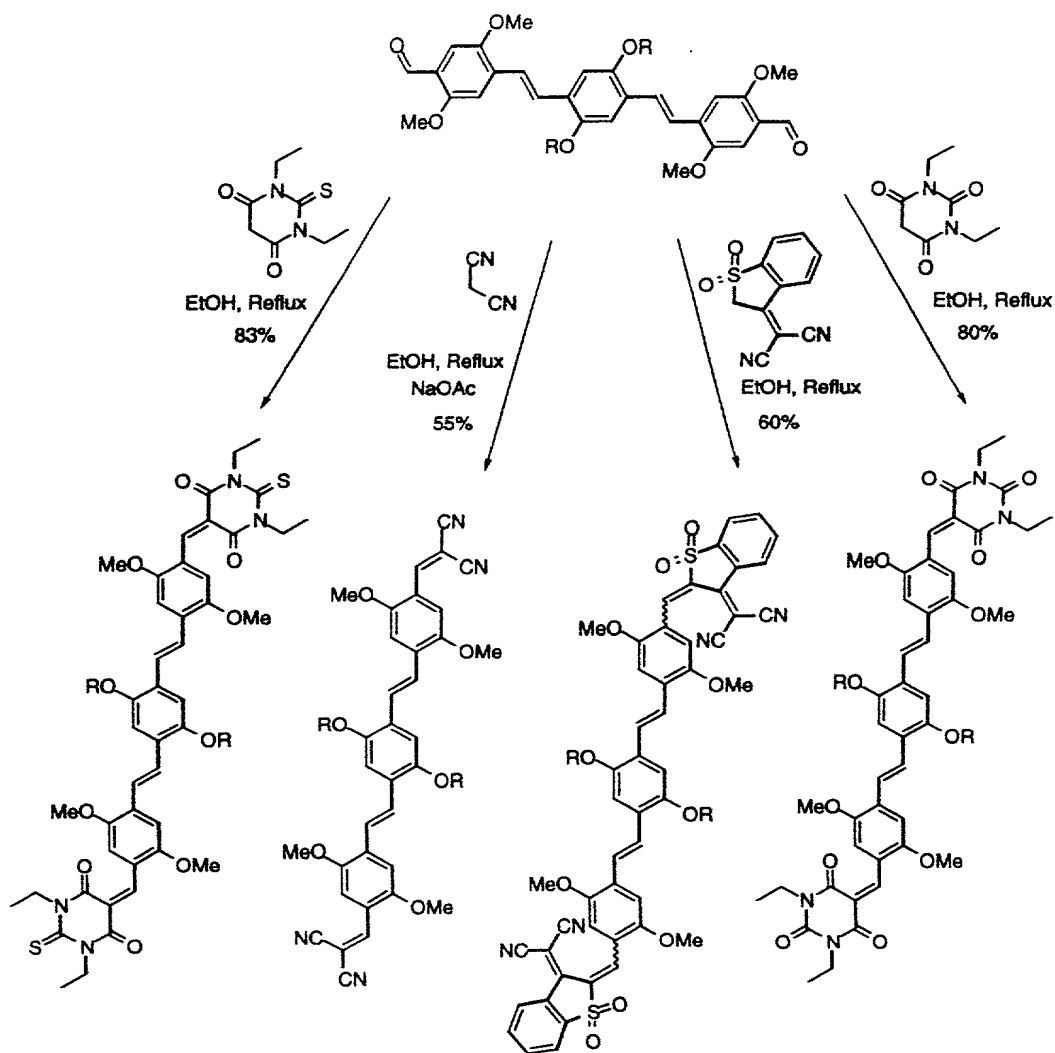


FIGURE 12

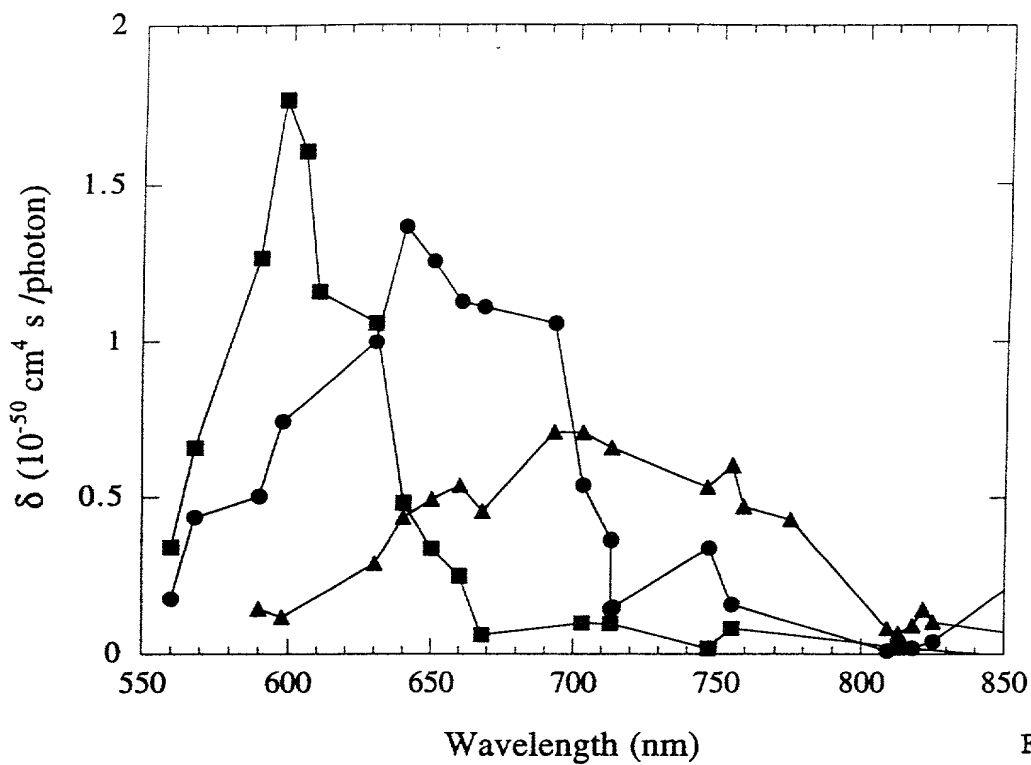


FIGURE 13

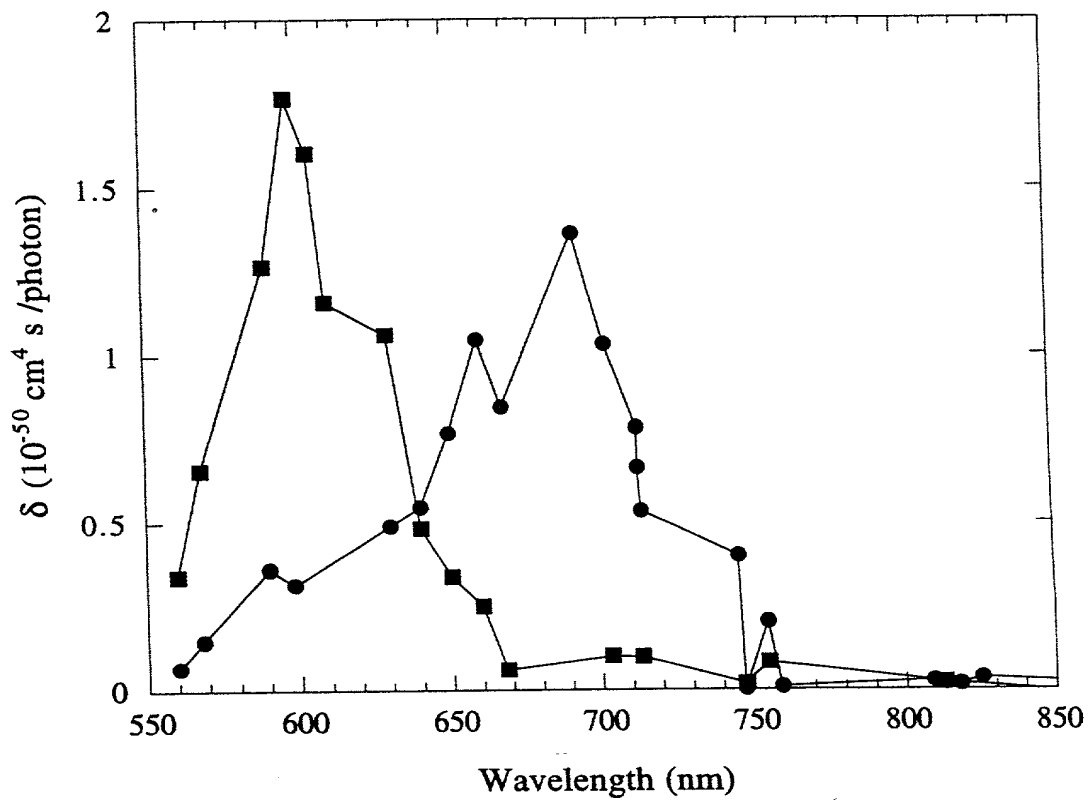
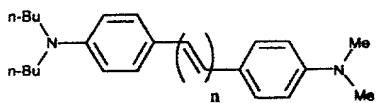
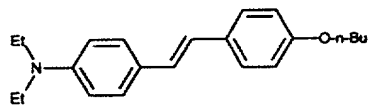
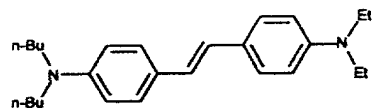
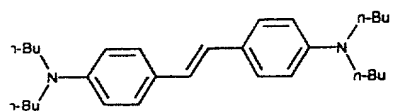


FIGURE 14

Compounds

Exposure time (sec) required for polymerization



n=2

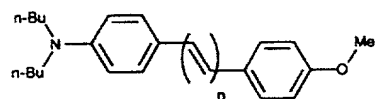
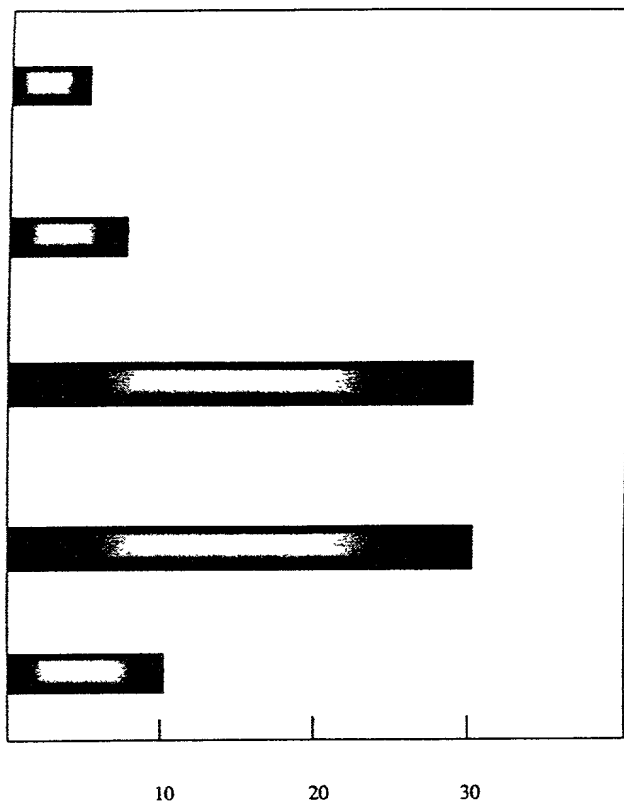
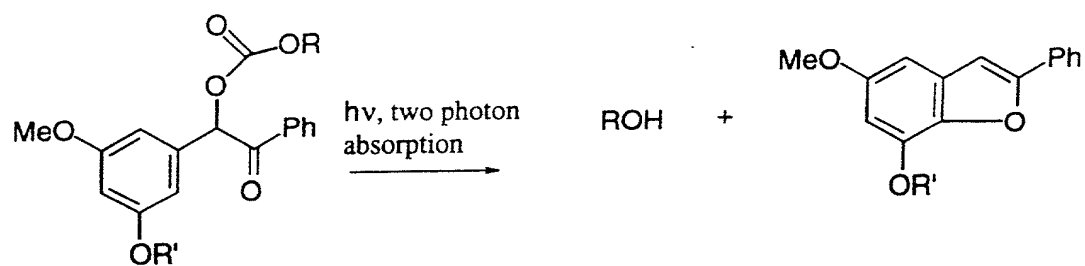
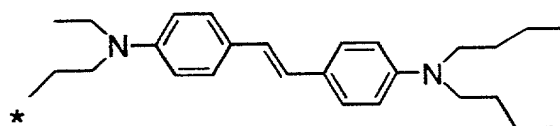
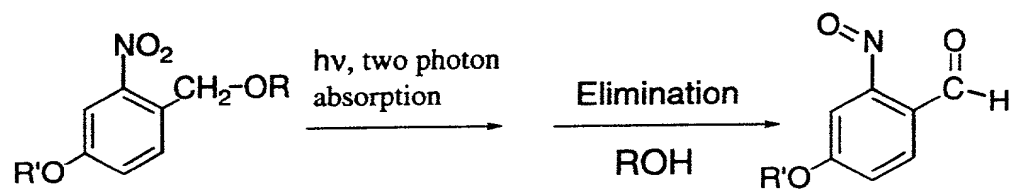
 $n=2$ 

FIGURE 15



or



or

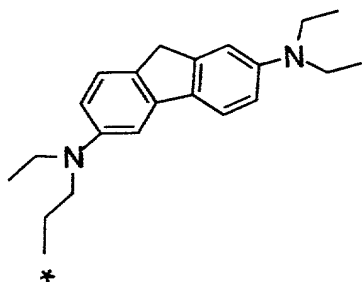
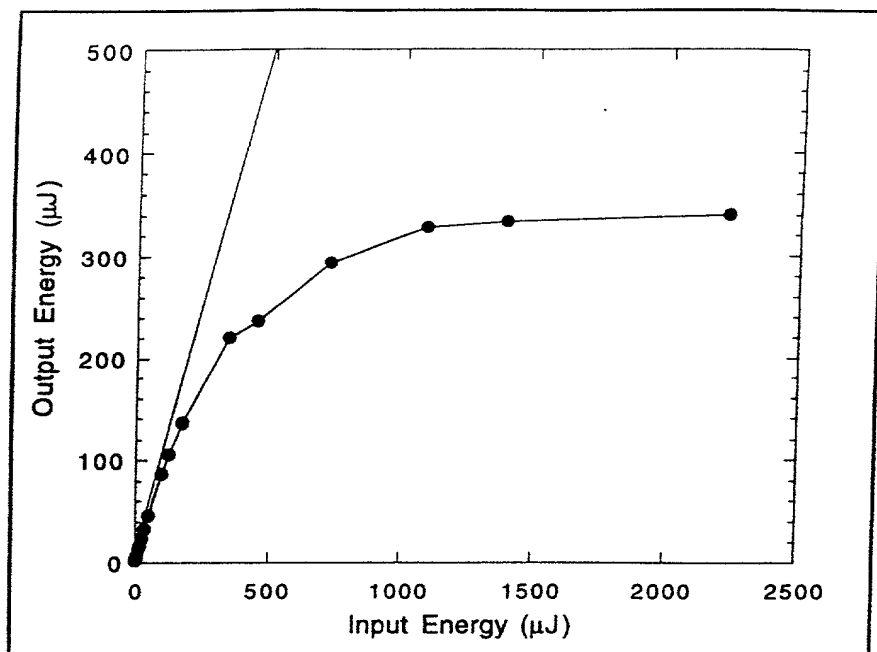


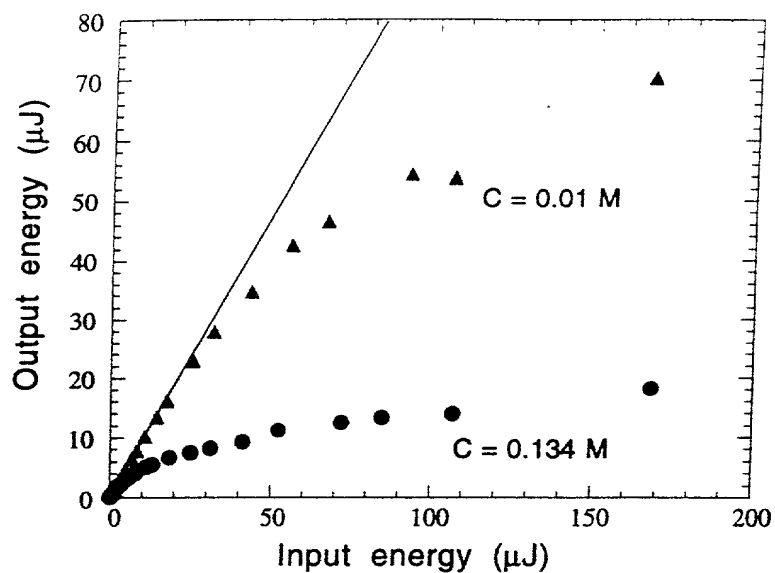
FIGURE 16

where * is the point of attachment.



Optical limiting by two-photon absorption in 4-dimethylamino-4'-dibutylaminostilbene (MBDAS) (points).

FIGURE 17



Two-photon optical limiting responses of 0.01 and 0.134 M solutions of 4,4'-bis(dibutylamino)stilbene for ~5-ns, 600 nm pulses. The straight line corresponds to the linear transmission (96%) of the 0.134 M solution.

FIGURE 18

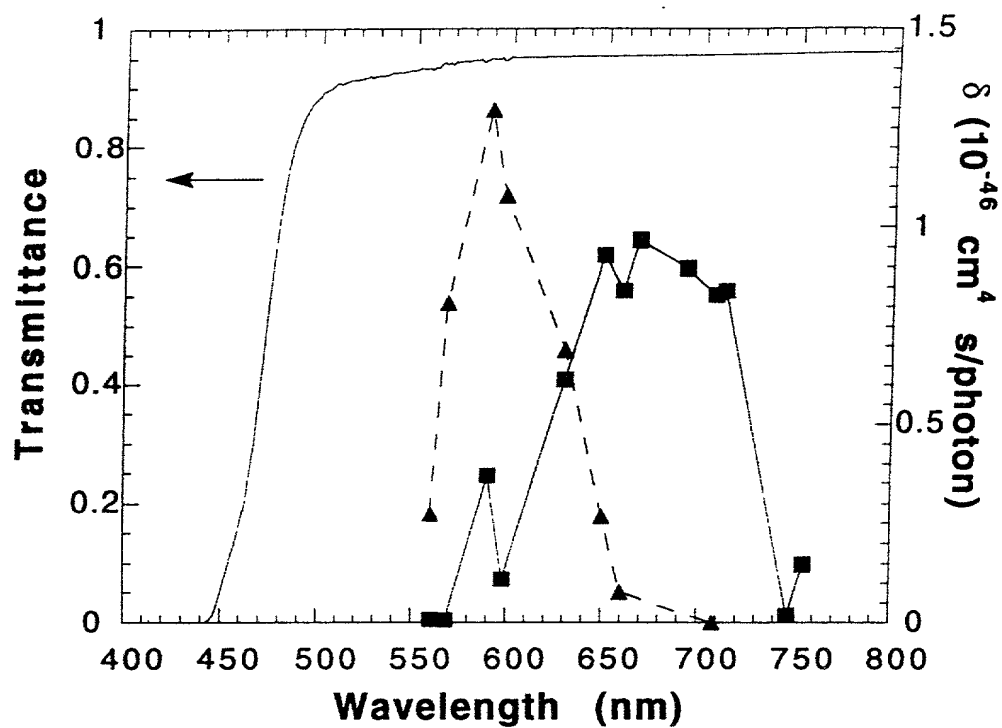
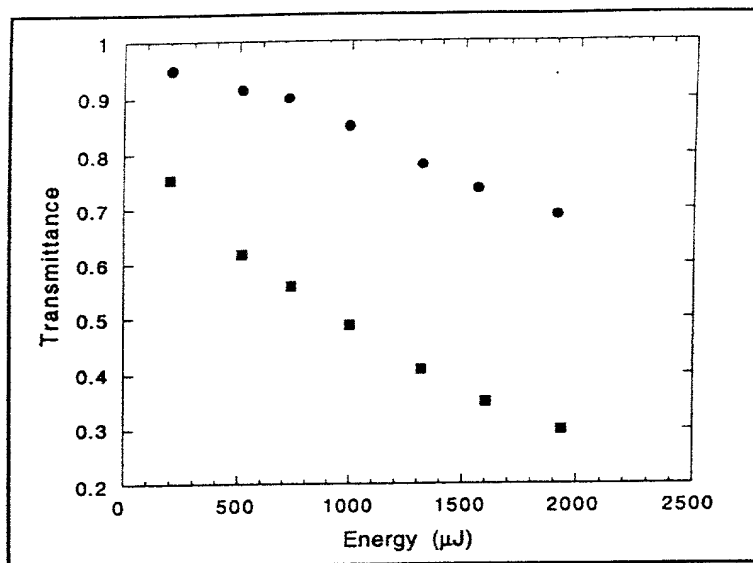


FIGURE 19

Linear transmission spectrum (solid line) of a mixture of 4,4'-bis(dibutylamino)stilbene and 4,4'-bis(diphenylamino)stilbene for a total molecular concentration of 0.1M.



Nonlinear transmission data showing enhanced two-photon absorption in a 1-(4-dimethylaminophenyl)-10-(4-dibutylaminophenyl)-deca-1,3,5,7,9-pentane (squares) as compared to the stilbene-like BDAS (circles). Measurements were performed at 598 nm using 0.01M solutions.

FIGURE 20